REMARKS

Claims 1-29 have been canceled.

Claims 30-34, 37, and 39 were rejected under 35 U.S.C. 102(b) as being anticipated by Erpelding et al (US 5,781,379), hereinafter referred to as Erpelding. Claims 35, 36, and 38 were rejected under 35 U.S.C. 103(a) as being unpatentable over Erpelding. Applicants respectfully traverse these claim rejections.

In paragraph 3 of the office action, the examiner states that "Figure 10 [of Erpelding] also shows depositing a plurality of solder bumps 195 & 200 on the backside 212." That is not correct. Solder balls 196 are deposited on the "second layer" 238 which is a dielectric layer of the flexure and not a surface of the slider. Solder balls 200 are also deposited on the "second layer" 238 which is a dielectric layer of the flexure and not a surface of the slider. Moreover, Erpelding does not disclose or suggest that the solder balls 200 ever contact the backside 212, even after assembly, because solder balls 200 are positioned to contact other solder balls 204 after assembly, and solder balls 204 are deposited on the surface of the trailing edge 220 of the slider and not on the backside 212. In Erpelding, the backside 212 is a surface that is not the same as, and is in fact orthogonal to, the surface of the trailing edge 220.

The claim rejections characterize item 238 shown in Fig. 11 of Erpelding as being "receptacles." That is not correct. Item 238 shown in Fig. 11 of Erpelding is a "third layer" made of an electrically conductive material. Even assuming that the examiner meant to identify spaces 188 in the "third layer" 238 as corresponding to "receptacles," that can not be correct since spaces 188 in Erpelding are not receptacles for solder bumps but rather are electrically isolating grooves between conductive electrical lines 184. If any of the spaces 188 were used as a solder bump receptacle, that use would cause an electrically short between two of the electrical lines 184, in direct contravention of the purpose of spaces 188 in Erpelding. For at least that reason, spaces 188 are not aligned with any of the solder balls in Erpelding, contrary to the statement in the office action that "the solder bumps are substantially aligned with the receptacles." In the case of Erpelding, that is simply not true.

The claim rejections also rely upon an assertion in paragraph 3 of the office action that "receptacles 238 ... extend through the insulation layer to the flexure tongue." That is not correct. Even assuming that the examiner meant to identify spaces 188 in the "third layer" 238 as corresponding to "receptacles," none of the spaces 188 in the third layer 238 extend through to the "first layer" 230 which corresponds to the thermally conductive flexure tongue, nor do they extend through the flexure tongue. On the contrary, the spaces 188 in the third layer 238 extend only to the second layer 234 which is an insulating dielectric layer.

Thus, in Erpelding, an insulating "second layer" 234 remains interposed between the solder balls 196 and the underlying "first layer" 230. The insulating "second layer" 234 prevents the solder from establishing direct contact with the underlying "first layer" 230.

Consequently, in Erpelding's configuration, if it desired to melt the solder balls 196 by heating the underlying "first layer" 230 (the flexure tongue), the insulating "second layer" 234 would tend to thermally insulate the solder balls 196 from the flexure tongue, tending to inhibit or delay such heating.

However, the slider to flexure soldering process now needs to be practically accomplished in a very short period of time in order to allow for automated and highly expensive vision assisted slider positioning systems to be fully utilized. The present patent application meets this contemporary need by teaching a particular heating method to melt the solder bumps: directly and locally heating the flexure tongue by means of a laser. In contrast, heating by convective heating in an oven to cause solder reflow can be slower, less direct, and/or less localized. For example the oven temperature must be maintained below the level that would degrade the integrity and magnetization of the magnetic read/write element already integrated into the slider.

Therefore, whereas the presence of the insulating "second layer" 234 as taught by Erpelding might be compatible with an assembly process that uses convective heating in an oven to cause solder reflow, it is incompatible with and teaches away from the use of direct and localized heating of the gimbal tongue using a laser.

The office action also avers that although Erpelding does not explicitly disclose the metallization of the backside 212, such disclosure is nonetheless "inherent" in Erpelding (i.e. the backside 212 would be inherently metalized). Legally, however, inherent disclosure in the absence of explicit disclosure requires that the non-explicitly-disclosed element be *necessarily* present in the reference. In the case of Erpelding though, metallization of backside 212 is *not necessary*. Firstly, merely because solder balls are in contact with the backside 212 after assembly does not mean that the backside 212 must first be metalized. Secondly, and more importantly, Erpelding does not even require the use of solder as the material for solder balls 196. *See e.g.* col. 10, lines 9-12 (where Erpelding states that "[i]t should be appreciated that materials other than solder could be used for the solder balls 196. Any fusible material that provides bonding would be acceptable, such as epoxy and thermal plastic adhesive ..."). Therefore, in the case of Erpelding, metallization of backside 212 is not *necessary* and therefore can not be deemed as inherently disclosed.

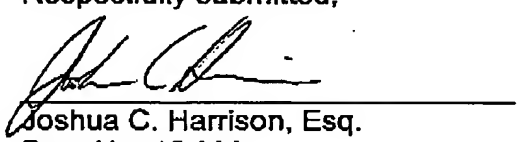
Independent claim 30 requires heating of the flexure tongue by a laser sufficiently to meld the solder bumps. There is no teaching whatsoever in Erpelding regarding melting the solder bumps by laser heating.

For any of the reasons described above, Erpelding cannot anticipate and does not render obvious independent claim 30 and the claims dependent thereon, and therefore, all pending claims are allowable over Erpelding.

All pending claims are in condition for allowance, and such action is respectfully requested. If it is felt for any reason that direct communication would serve to advance prosecution of this case to finality, the Examiner is invited to call the undersigned at the below-listed telephone number.

Date: August 3, 2005

Respectfully submitted,



Joshua C. Harrison, Esq.
Reg. No. 45,686

Western Digital Corporation
20511 Lake Forest Drive
Lake Forest, CA 92630
Tel: (949) 672-6119
Fax: (949) 672-6604

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Fax: 949.672.6604

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APPLICATION NO.	10/026,152
FILING DATE	12/21/2001
FIRST NAMED INVENTOR	Brian Scott Thornton, et al.
ART UNIT	2652
CONFIRMATION NO.	8234
EXAMINER	David Donald Davis
ATTORNEY DOCKET NO.	K35R1732

TITLE: FLEXURE DESIGN AND ASSEMBLY PROCESS FOR ATTACHMENT OF SLIDER USING SOLDER AND LASER REFLOW

ATTACHED WITH THIS SUBMISSION:

1. Transmittal Form (1 page)
2. Response to Office Action Dated 05/05/2005 (6 pages)

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Western Digital

Western Digital Corporation
20511 Lake Forest Drive, C118-G
Lake Forest, California 92630

Tel: (949) 672-7000
Fax: (949) 672-6604

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